

HYDROLYSIS OF OLIGOSACCHARIDES IN SOYBEAN PRODUCTS BY
DEBARYOMYCES HANSENI UFV-1 α -GALACTOSIDASES

Viana, P.A., de Rezende, S.T., Falkoski, D.L., Guimarães, V.M.

Departamento de Bioquímica e Biologia Molecular, Instituto de Biotecnologia Aplicada à Agropecuária - BIOAGRO – UFV, Viçosa - MG.

α -Galactosides are abundant sugars found in legumes such as soybean. Since humans and monogastric animals lack α -galactosidase in the digestive tract, they are unable to digest these sugars, which induce flatulence. The use of α -galactosidases is promising as a means to overcome this problem, and to increase the consumption of soy products. We described applications of free and immobilized extracellular α -galactosidase and permeabilized cells of *Debaryomyces hansenii* UFV-1 containing intracellular α -galactosidase for soymilk and soy molasses treatment. The objective is to reduce the raffinose oligosaccharides in these products. Immobilized α -galactosidase exhibited an activity of 40 U per g of silica and an activity yield of 50%. The optimum pH of free and immobilized α -galactosidase was 5.0 and optima temperatures were 60°C and 80°C, respectively. The soymilk stachyose was completely hydrolyzed by different enzyme forms after incubation for 4h at 60°C, while raffinose was reduced by 100%, 25% and 68% by free, immobilized enzymes and permeabilized cells, respectively. The molasses treatment with free enzyme for 6h promoted reduction in stachyose and raffinose contents by 100% and 50%, respectively. The results indicate that *D. hansenii* α -galactosidases may be used for establishment of a process to improve nutritional value of soy products.

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